# RECEIVED FEB 07 2012 SUPERFUND DIVISION

February 2, 2012

Mr. Jason Gunter Remedial Project Manager U.S. Environmental Protection Agency Region 7 - Superfund Branch 901 North 5<sup>th</sup> Street Kansas City, KS 66101

Re: The Doe Run Company – Bonne Terre Superfund Site, Eastern and Western Portions

**Quarterly Progress Report** 

Dear Mr. Gunter:

As required by Article VIII, Section 33 of the Administrative Order on Consent (Docket No. CERCLA-7-2000-0024) and Article VIII, Section 29 of the Administrative Order on Consent (Docket No. CERCLA-7-2000-0025) for the referenced projects and on behalf of The Doe Run Company, a progress report for the period October 1, 2011 to December 31, 2011 is enclosed. If you have any questions or comments, please call me at 573-638-5020 or Mark Nations at 573-518-0800.

Sincerely,

T/L. Mørris, P.E., R.G.

Vice President

TLM/jms Enclosure

c: Mark Nations - TDRC

Matt Wohl - TDRC

Steve Batts - TDRC

Kathy Rangen - MDNR

Tim Skoglund - Barr Engineering

40385868 Superfund

#### **Bonne Terre Mine Tailings Site**

Bonne Terre, Missouri

#### Removal Action - Quarterly Progress Report

Period: October 1, 2011 - December 31, 2011

#### 1. Significant Developments and Work Performed this Period:

- a. Completed the 4<sup>th</sup> quarter stormwater sampling event for the southern detention basin sampling point (eastern portion). Results of this sample are included with this progress report.
- 2. Problems Encountered this Period:
  - a. None.
- 3. Significant Developments Anticipated and Work Scheduled for Next Period:
  - a. Complete the 1<sup>st</sup> quarter 2012 stormwater sampling event for the southern detention basin sampling point.
- 4. Planned Resolutions of Past or Anticipated Problems:
  - a. Not applicable.
- 5. Changes in Personnel:
  - a. None.

**End of Quarterly Progress Report** 

WorkOrder: 11120948



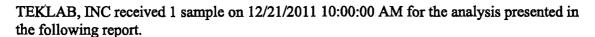
December 28, 2011

Allison Olds
Barr Engineering Company
1001 Diamond Ridge
Suite 1100
Jefferson City, MO 65109

TEL: (573) 638-5007 FAX: (573) 638-5001

**RE:** Bonne Terre MTS/25/86-0014

Dear Allison Olds:



Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Michael L. Austin

Project Manager

(618)344-1004 ex 16

MAustin@teklabinc.com



# **Report Contents**

http://www.teklabinc.com/

Client: Barr Engineering Company Work Order: 11120948
Client Project: Bonne Terre MTS/25/86-0014 Report Date: 28-Dec-11

#### This reporting package includes the following:

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Chain of Custody	Appended



#### **Definitions**

http://www.teklabinc.com/

Client: Barr Engineering Company

Work Order: 11120948

Client Project: Bonne Terre MTS/25/86-0014

Report Date: 28-Dec-11

#### Abbr Definition

- CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
- DNI Did not ignite
- DUP Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
- ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
- IDPH IL Dept. of Public Health
- LCS Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
- LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
  - MB Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
- MDL Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.
- MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
- MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MW Molecular weight
- ND Not Detected at the Reporting Limit

#### NELAP NELAP Accredited

- PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
- RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
- RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
- SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
- Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
- TNTC Too numerous to count ( > 200 CFU )

#### Qualifiers

- # Unknown hydrocarbon
- E Value above quantitation range
- M Manual Integration used to determine area response
- R RPD outside accepted recovery limits
- X Value exceeds Maximum Contaminant Level

- B Analyte detected in associated Method Blank
- H Holding times exceeded
- ND Not Detected at the Reporting Limit
- S Spike Recovery outside recovery limits



## **Case Narrative**

http://www.teklabinc.com/

Client: Barr Engineering Company

Client Project: Bonne Terre MTS/25/86-0014

Work Order: 11120948

Report Date: 28-Dec-11

Cooler Receipt Temp: 0.8 °C

#### **Locations and Accreditations**

	Collinsville			Springfield		Kansas City						
Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425		Address	3920 Pintail Dr Springfield, IL 62	711-9415	Address	8421 Nieman Road Lenexa, KS 66214					
Phone	(618) 344-1004		Phone	(217) 698-1004		Phone	(913) 541-1998					
Fax	(618) 344-1005		Fax	(217) 698-1005		Fax	(913) 541-1998					
Email	jhriley@teklabinc.com		Email	kmcclain@teklabi	nc.com	Email	dthompson@teklabinc.com					
State		Dept		Cert#	NELAP	Exp Date	Lab					
Illinois		IEPA		100226	NELAP	1/31/2012	Collinsville					
Kansas	3	KDHE		E-10374	NELAP	1/31/2012	Collinsville					
Louisia	ana	LDEQ		166493	NELAP	6/30/2012	Collinsville					
Louisia	ana	LDEQ		166578	NELAP	6/30/2012	Springfield					
Arkans	Sas	ADEQ		88-0966		3/14/2012	Collinsville					
Illinois	<b>;</b>	IDPH		17584		4/30/2012	Collinsville					
Kentuc	cky	UST		0073		5/26/2012	Collinsville					
Missou	ıri	MDNR		00930		4/13/2013	Collinsville					
Oklaho	Collinsville, IL 62234-7425 (618) 344-1004 (618) 344-1005 jhriley@teklabinc.com  Dept  IEPA  KDHE  LDEQ  ADEQ  IDPH  UST  MDNR			9978		8/31/2012	Collinsville					



## **Laboratory Results**

http://www.teklabinc.com/

Client: Barr Engineering Company

Work Order: 11120948

Client Project: Bonne Terre MTS/25/86-0014

Report Date: 28-Dec-11

Lab ID: 11120948-001

Client Sample ID: BTE-4 Qtr-11

Matrix: AQUEOUS

Collection Date: 12/20/2011 13:00

THEREIN /IQUEOUU				Concentor	Duter 12	20/2011	10.00	
Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 375.2 REV 2.0 1993	(TOTAL)		The state of the s		Married .			
Sulfate	NELAP	75		157	mg/L	1	12/22/2011 14:41	R158102
STANDARD METHOD 18TH	ED. 4500-H B, LABOR	ATORY AN	ALYZED			Harris Co.		
Lab pH	NELAP	1.00		7.62		1	12/21/2011 16:18	R158038
STANDARD METHODS 18TH	H ED. 2340 C		- "					
Hardness, as ( CaCO3 )	NELAP	5		400	mg/L	1	12/22/2011 6:45	R158019
STANDARD METHODS 18TH	H ED. 2540 D							
Total Suspended Solids	NELAP	6	R	12	mg/L	1	12/21/2011 13:19	R158073
% RPD was outside the QC limits the PQL, the results are considered					ng/L or less a	nd have a	difference of no greate	r than
STANDARD METHODS 18TH	HED. 2540 F				# 15 P. C.			
Solids, Settleable	NELAP	0.1		< 0.1	ml/L	1	12/21/2011 13:05	R158035
STANDARD METHODS 18TH	ED. 5310 C, ORGANI	C CARBON			341			
Total Organic Carbon (TOC)	NELAP	1.0		3.2	mg/L	1	12/23/2011 8:07	R158167
EPA 600 4.1.1, 200.7R4.4, MI	ETALS BY ICP (DISSO	LVED)		124				100
Cadmium	NELAP	2.00		< 2.00	μg/L	1	12/22/2011 15:55	73820
Zinc	NELAP	10.0		34.3	μg/L	1	12/22/2011 15:55	73820
EPA 600 4.1.4, 200.7R4.4, ME	ETALS BY ICP (TOTAL	-)					Secretary and a	
Cadmium	NELAP	2.00		< 2.00	μg/L	1	12/22/2011 16:40	73808
Zinc	NELAP	10.0		48.6	μg/L	1	12/22/2011 16:40	73808
STANDARD METHODS 18TH	I ED. 3030 B, 3113 B, I	METALS BY	GFAA (	DISSOLVED)		3.7	. (A) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	
Lead	NELAP	2.00		< 2.00	μg/L	1	12/22/2011 14:51	73810
STANDARD METHODS 18TH	I ED. 3030 E, 3113 B, I	METALS BY	GFAA	3		-		
								73807



# Sample Summary

http://www.teklabinc.com/

Client: Barr Engineering Company

Client Project: Bonne Terre MTS/25/86-0014

Work Order: 11120948

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
11120948-001	BTE-4 Qtr-11	Aqueous	5	12/20/2011 13:00



# **Dates Report**

http://www.teklabinc.com/

Client: Barr Engineering Company	Work Order: 11120948
Client Project: Bonne Terre MTS/25/86-0014	Report Date: 28-Dec-11

Sample ID	Client Sample ID		Collection Date	Received Date	
	Test Name	2.55 2.549		Prep Date/Time	Analysis Date/Time
11120948-001A	BTE-4 Qtr-11		12/20/2011 13:00	12/21/2011 10:00:00 AM	
	Standard Methods 18	8th Ed. 2540 F		The state of the second second second	12/21/2011 13:05
11120948-001B	BTE-4 Qtr-11		12/20/2011 13:00	12/21/2011 10:00:00 AM	
	EPA 600 375.2 Rev	2.0 1993 (Total)			12/22/2011 14:41
	Standard Method 18t	h Ed. 4500-H B, Laboratory Analy	yzed		12/21/2011 16:18
	Standard Methods 18	8th Ed. 2340 C			12/22/2011 6:45
	Standard Methods 18	th Ed. 2540 D			12/21/2011 13:19
11120948-001C	BTE-4 Qtr-11		12/20/2011 13:00	12/21/2011 10:00:00 AM	
	EPA 600 4.1.4, 200.7	R4.4, Metals by ICP (Total)		12/21/2011 14:54	12/22/2011 16:40
	Standard Methods 18	th Ed. 3030 E, 3113 B, Metals by	GFAA	12/21/2011 14:53	12/23/2011 10:49
11120948-001D	BTE-4 Qtr-11		12/20/2011 13:00	12/21/2011 10:00:00 AM	
	EPA 600 4.1.1, 200.7	R4.4, Metals by ICP (Dissolved)		12/22/2011 7:52	12/22/2011 15:55
	Standard Methods 18	th Ed. 3030 B, 3113 B, Metals by	GFAA (Dissolved)	12/21/2011 15:53	12/22/2011 14:51
11120948-001E	BTE-4 Qtr-11		12/20/2011 13:00	12/21/2011 10:00:00 AM	
	Standard Methods 18	th Ed. 5310 C, Organic Carbon			12/23/2011 8:07



http://www.teklabinc.com/

Client: Barr Engineering Company

Work Order: 11120948

Client Project: Bonne Terre MTS/25/86-0014

EPA 600 375.2 REV 2.0 1993	(TOTAL	1					7200			
Batch R158102 SampType SampID: ICB/MBLK	: MBLK		Units mg/L							Date
Analyses		RL	Qual		Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Sulfate		75		< 75						12/22/2011
Batch R158102 SampType SampID: ICV/LCS	: LCS		Units mg/L							Date
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Sulfate		75		146	150	0	97.5	90	110	12/22/2011
STANDARD METHOD 18TH	ED. 4500	-H B, L/	ABORATORY	ANALYZE	D		The t		- 张.摇.苍	
Batch R158038 SampType SampID: LCS	: LCS		Units							Date
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Lab pH		1.00		7.02	7.00	0	100.3	99.1	100.8	12/21/2011
<b>Batch</b> R158038 SampType SampID: 11120948-001BDUP	: DUP		Units					RPD	Limit 10	Date
Analyses		RL	Oual	Result	Spike	SPK Ref Val	%REC	RPD Ref	/al %RPD	Analyzed
Lab pH		1.00		7.63				7.620	0.13	12/21/2011
STANDARD METHODS 18TH	1 ED. 234	10 C				- 23.78				
Batch R158019 SampType SampID: MB-R158019	: MBLK		Units mg/L							Date
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Hardness, as ( CaCO3 )		5		< 5						12/21/2011
Batch R158019 SampType SampID: LCS-R158019	: LCS		Units mg/L							Date
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Hardness, as ( CaCO3 )		5	- Vaux	1000		0	100.0	90	110	12/21/2011
<b>Batch</b> R158019 SampType SampID: 11120948-001BMS	: MS		Units mg/L							Date
Analyses		RL	Oual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Hardness, as ( CaCO3 )		5	•	800	400	400.0	100.0	85	115	12/22/2011
Batch R158019 SampType	: MSD		Units mg/L					RPD	Limit 10	
SampID: 11120948-001BMSD										Date
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref \	/al %RPD	Analyzed
Hardness, as ( CaCO3 )		5		800	400	400.0	100.0	800.0	0.00	12/22/2011
-										



http://www.teklabinc.com/

Client: Barr Engineering Company

Work Order: 11120948

Client Project: Bonne Terre MTS/25/86-0014

STANDARD METH Batch R158073	SampType:	MRIK		Units mg/L							
SamplD: MBLK	Samp Type.	WIDER		Onto mg/L							Date
Analyses			RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Total Suspended S	Solids		6		< 6						12/21/2011
Batch R158073	SampType:	LCS		Units mg/L							
SampID: LCS											Date Analyzed
Analyses			RL	Qual	Result		SPK Ref Val			High Limit	
Total Suspended S			6		101	100	0	101.0	85	115	12/21/2011
Total Suspended S			6		91	100	0	91.0	85	115	12/21/2011
Total Suspended S	Solids		6		100	100	0	100.0	85	115	12/21/2011
Batch R158073	SampType:	DUP		Units mg/L					RPD	Limit 15	
SampID: 11120948-	001B DUP										Date
Analyses			RL	Oual	Result	Spike	SPK Ref Val	%REC	RPD Ref \	√al %RPD	Analyzed
Total Suspended S	Solids		6	R	10				12.00	18.18	12/21/2011
STANDARD METH	IODS 18TH F	ED. 531	0 C. OR	GANIC CARB	ON						
Batch R158167	SampType:			Units mg/L							
SamplD: MB-R1581											Dete
	01		DI	Oval	Dogult	Cmileo	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Analyses Total Organia Carl	on (TOC)		RL	Qual	< 1.0	Spike	OF ICITIES VAI	701110	LOW LITTIC	Tilgii Liilii	
Total Organic Carb	oon (TOC)		1.0		< 1.0						12/23/2011
Batch R158167	SampType:	LCS		Units mg/L							
SampID: LCS-R158	167										Date
Analyses			RL	Qual	Result	Snike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Total Organic Carb	on (TOC)		5.0	<b>V</b>	50.8	48.2	0	105.4	89.6	109.5	12/23/2011
32000	and the state of t	105-6-700							31.		
EDA 600 / 1 1 200	7R44 MET	VICE									
			Y ICP (D	ISSOLVED)		14			2	il d'ac	
Batch 73820 SamplD: MB-73820	SampType:		Y ICP (D	Units µg/L		***					Date
Batch 73820 SampID: MB-73820				Units µg/L	Result	Snike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Batch 73820 SampID: MB-73820 Analyses			RL		Result		SPK Ref Val				Analyzed
Batch 73820 SamplD: MB-73820 Analyses Cadmium			RL 2.00	Units µg/L	< 2.00	2.00	0	0	-100	100	Analyzed 12/22/2011
Batch 73820 SampID: MB-73820 Analyses			RL	Units µg/L							Analyzed
Batch 73820 SampID: MB-73820 Analyses Cadmium Zinc  Batch 73820	SampType: SampType:	MBLK	RL 2.00	Units µg/L	< 2.00	2.00	0	0	-100	100	Analyzed 12/22/2011
Batch 73820 SampID: MB-73820 Analyses Cadmium Zinc	SampType: SampType:	MBLK	RL 2.00	Units µg/L Qual	< 2.00	2.00	0	0	-100	100	Analyzed 12/22/2011 12/22/2011 Date
Batch 73820 SampID: MB-73820 Analyses Cadmium Zinc  Batch 73820	SampType: SampType:	MBLK	RL 2.00	Units µg/L Qual	< 2.00	2.00	0	0	-100 -100	100	Analyzed 12/22/2011 12/22/2011
Batch 73820 SampID: MB-73820 Analyses Cadmium Zinc  Batch 73820 SampID: LCS-73820	SampType: SampType:	MBLK	RL 2.00 10.0	Units µg/L  Qual  Units µg/L	< 2.00 < 10.0	2.00	0	0	-100 -100	100	Analyzed 12/22/2011 12/22/2011 Date



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Client: Barr Engineering Company

Work Order: 11120948

Client Project: Bonne Terre MTS/25/86-0014

MS		Units µg/L							
									Date
	RL	Oual	Result	Snike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
	2.00		46.0	50.0	0	92.0	75	125	12/22/201
	10.0		516	500	34.3	96.3	75	125	12/22/201
MSD		Units µg/L					RPD	Limit 20	
									Date
	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref	Val %RPD	Analyzed
	2.00		47.5	50.0	0	95.0	46	3.21	12/22/201
	10.0		530	500	34.3	99.1	515.9	2.68	12/22/201
TALS B	Y ICP (T	OTAL)	201.201	1 3 4 3					No. No. Mys.
MBLK		Units µg/L							
									Date
	RL	Oual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
	2.00		< 2.00	2.00	0	0	-100	100	12/22/201
	2.00		< 2.00	2.00	0	0	-100	100	12/22/201
	10.0		< 10.0	10.0	0	0	-100	100	12/22/201
	10.0		< 10.0	10.0	0	0	-100	100	12/22/201
LCS		Units µg/L							
									Date
	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
	2.00		52.3	50.0	0	104.6	85	115	12/22/201
	2.00		51.8	50.0	, 0	103.6	85	115	12/22/201
	10.0		538	500	0	107.6	85	115	12/22/201
	10.0		535	500	0	107.1	85	115	12/22/201
MS		Units µg/L							
									Date
	RL	Oual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
	2.00		51.8	50.0	0	103.6	75	125	12/22/201
	10.0		587	500	48.6	107.7	75	125	12/22/2011
MSD		Units µg/L	-				RPD	Limit 20	
									Date
	RI.	Oual	Result	Snike	SPK Ref Val	%REC	RPD Ref \	/al %RPD	Analyzed
	RL 2.00	Qual	Result 51.6	Spike 50.0	SPK Ref Val	%REC 103.2	RPD Ref V 51.8	0.39	Analyzed 12/22/201
	TALS B MBLK	RL 2.00 10.0  MSD RL 2.00 10.0  TALS BY ICP (T MBLK  RL 2.00 2.00 10.0 10.0 10.0  LCS RL 2.00 2.00 10.0 10.0 10.0 10.0	RL Qual 2.00 10.0  MSD Units μg/L  RL Qual 2.00 10.0  TALS BY ICP (TOTAL)  MBLK Units μg/L  RL Qual 2.00 2.00 10.0 10.0 10.0 10.0  MS Units μg/L  RL Qual 2.00 2.00 10.0 10.0 10.0 10.0	RL   Qual   Result   2.00   46.0   10.0   516     MSD	RL   Qual   Result   Spike	RL   Qual   Result   Spike   SPK Ref Val	RL   Qual   Result   Spike   SPK Ref Val   %REC	RL   Qual   Result   Spike   SPK Ref Val   %REC   Low Limit	RL   Qual   Result Spike   SPK Ref Val   %REC   Low Limit   High Limit



http://www.teklabinc.com/

Client: Barr Engineering Company

Work Order: 11120948

Client Project: Bonne Terre MTS/25/86-0014

<b>Batch 73810 SampID</b> : MB-73810	трТуре:	MBLK		Units µg/L							Date
Analyses			RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Lead			2.00	Vuui	< 2.00	2.00	0	0	-100	100	12/22/201
Batch 73810 San SampID: LCS-73810	трТуре:	LCS		Units µg/L							Date
Analyses			RL	Qual	Result		SPK Ref Val			High Limit	Analyzed
Lead			2.00		13.9	15.0	0	92.4	80	120	12/22/201
<b>Batch 73810 San</b> SampID: 11120948-001	mpType:	MS		Units µg/L		-					Date
Analyses			RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Lead			2.00		14.2	15.0	0.7288	89.6	70	130	12/22/201
<b>Batch 73810 Sar</b> SampID: 11120948-001	mpType:	MSD		Units µg/L					RPD	Limit 20	Date
Analyses			RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref \	/al %RPD	Analyzed
Lead			2.00		14.5	15.0	0.7288	91.5	14.1644	2.02	12/22/2011
STANDARD METHOD	S 18TH E	D. 303	0 E, 311	3 B, METALS	BY GFAA						
<b>Batch 73807 Sar</b> SampID: MB-73807	mpType:	MBLK		Units µg/L							Date
Analyses			RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Lead			2.00		< 2.00	2.00	0	0	-100	100	12/23/2011
Batch 73807 Sar SampID: LCS-73807	прТуре:	LCS		Units µg/L							Date
Analyses			RL	Qual	Result	Snike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Lead			2.00	V 4442		15.0	0	88.8	80	120	12/23/2011
<b>Batch 73807 Sar</b> SampID: 11120948-0010	npType:	MS		Units µg/L							Date
Analyses			RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Analyzed
Lead			4.00		34.5		22.9976	76.9	70	130	12/23/2011
72007	npType:	MSD		Units µg/L					RPD	Limit 20	
											Data
SampID: 11120948-0010			Dī	Ovel	Domile	Cniles	SPK Ref Val	%RFC	RPN Ref \	/al %RPD	Date Analyzed
Batch 73807 SamplD: 11120948-0010 Analyses Lead			RL 4.00	Qual	Result		SPK Ref Val 22.9976	%REC 83.8	RPD Ref V 34.536	'al %RPD 2.93	



Custody seal(s) intact on shipping container/cooler.

## **Receiving Check List**

http://www.teklabinc.com/

Work Order: 11120948 Client: Barr Engineering Company Client Project: Bonne Terre MTS/25/86-0014 Report Date: 28-Dec-11 Carrier: Ricky Schmidt Received By: TWM Completed by: Reviewed by: deather A. White On: On: 21-Dec-11 21-Dec-11 Heather A. White Timothy W. Mathis Pages to follow: Extra pages included 0 Chain of custody Yes 🗹 No 🗆 Temp \*C Not Present 0.8 Shipping container/cooler in good condition? Ice 🗹 Blue Ice Type of thermal preservation? None Dry Ice Yes 🗹 No 🗌 Chain of custody present? Yes 🗹 Chain of custody signed when relinquished and received? Yes 🗹 No 🗆 Chain of custody agrees with sample labels? No 🗆  $\mathbf{V}$ Yes Samples in proper container/bottle? No 🗌  $\mathbf{V}$ Yes Sample containers intact? No 🗆 Yes Sufficient sample volume for indicated test? V No 🗌 All samples received within holding time? Yes Lab 🗹 Field 🔲 NA Reported field parameters measured: No 🗆 Yes 🗹 Container/Temp Blank temperature in compliance? When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected. Water - at least one vial per sample has zero headspace? Yes 🗆 No 🗀 No VOA vials V  $\mathbf{V}$ Yes 🗌 No 🗌 No TOX containers Water - TOX containers have zero headspace? Yes 🗸 No 🗆 Water - pH acceptable upon receipt? Any No responses must be detailed below or on the COC.

## **CHAIN OF CUSTODY**

pg. \_/\_ of \_/\_ Work Order # \_///2094/3

TEKLAB, INC. 5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: Bert Engineering Co													CS												
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Are these samples known to be involved in litigal Are these samples known to be hazardous?  Are there any required reporting limits to be met limits in comment section.  Yes  No	Yes 🔕 No			_			ا در						d , 2			, 2,72 , 2,72	r Hu	cus:	<b>.</b> /,	Ser	11.7	. 14-14	٧.	ey∧,	<i>201</i>
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The individual signing this agreement on behalf of client acknowledges that he/she has read and understands the terms and conditions of this agreement, on the reverse side, and that he/she has the authority to sign on behalf of client.

WHITE & YELLOW - LAB PINK - SAMPLER'S COPY